

REMARKS

Claims 1-11 are pending in the present application. Applicants note with appreciation the allowance of claims 8 and 9. With entry of this Amendment, Applicants amend claims 1, 5 and 6 and cancel claims 2, 10 and 11 without prejudice. Reexamination and reconsideration are respectfully requested.

The Examiner rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Borenstein (US 5559696), Kawakami (US 5652489) or Nishikawa et al. (US 5179329). The rejection is respectfully traversed.

Independent claim 1 recites a transferring apparatus comprising at least two moving bodies with mutual interference potential and a detection unit. The detection unit includes an encoder directly connected to a motor driving a given body. The detection unit also includes a driver for receiving the detection signal from the encoder and determining positional information of the given body by using an established proportional relationship between a rotation angle of the rotating shaft of the motor and the position of the given body. The detection unit also includes a controller for receiving the positional information and inputting a sequence control program to the driver to control the motor. The controller also the other moving bodies so that there is no interference.

Borenstein is directed to improving dead-reckoning accuracy. To achieve this objective, a mobile robot is either attached to a trailer (Fig. 1), attached to another robot (Fig. 3) or works with another robot (Fig. 13). The measurements made by the attached or accompanying trailer/robots are used to determine dead-reckoning errors of the mobile robot. None of the embodiments discloses a driver that receives a detection signal from an encoder, determines positional information based on the detection signal, outputs the positional information to a controller and then receives a sequence control program with the controller also controlling more than one moving body from interfering with each other. In the first two embodiments, the mobile robot is *attached* to a trailer or another robot and, thus, there is no control for interference. The third embodiment does not disclose a single

controller for controlling the two robots. Accordingly, claim 1 and its dependent claim 3 are not anticipated by or obvious in view of Borenstein for at least the reasons set forth above.

Kawakami is directed to a mobile robot capable of working without mutual collision with a plurality of other robots. Fig. 2 illustrates the robot with a CPU 19, while Fig. 3 shows the CPU in detail. There is no common CPU between the robots. Thus, Kawakami does not disclose a driver that receives a detection signal from an encoder, determines positional information based on the detection signal, outputs the positional information to a controller and then receives a sequence control program with the controller also controlling more than one moving body from interfering with each other. Accordingly, claim 1 and its dependent claim 3 are not anticipated by or obvious in view of Kawakami for at least the reason set forth above.

Claim 1 recites that an absolute encoder is "directly connected to the motor thereby to detect a revolution amount of a rotating shaft of the motor" and that positional information is "determined by using an established proportional relationship between a rotational angle of the rotating shaft of the motor and the position of the at least one moving body" The cited section of Nishikawa at Col. 7, lines 10-15 merely discloses an encoder attached to the axel. Another embodiment of Nishikawa at Col. 17, lines 38-66 discloses utilizing two encoders to correct a deviation from the track. The encoders are used to obtain travel distance, travel speed and angle of rotation of the robot from the difference of the signals between the encoders. The information is then used to correct any deviation from the track. Thus, there is no disclosure or suggestion of determining positional information through the use of established proportional relationship between a rotation angle of a rotating shaft and the position of a moving body.

The Examiner rejected claim 4 -- which depends from claim 1 -- under § 103(a) as being unpatentable over either Borenstein, Kawakami, Nishikawa in view of either Matsumara (US 5919529) or Kitahara et al. (US 5482068). Matsumara and Kitahara do not make up for the deficiencies of Borenstein, Kawakami and Nishikawa. Matsumara discloses transporter robots (MTR1 to MTR3) that operate on rails (Fig. 1) or a rail (Fig. 4). Kitahara merely discloses a cleaning apparatus. Neither reference discloses an absolute encoder and determining the positional

information as recited or a driver that receives a detection signal from an encoder, determines positional information based on the detection signal, outputs the positional information to a controller and then receives a sequence control program with the controller also controlling more than one moving body from interfering with each other. Accordingly, claim 4 is not obvious in view of the cited references for at least the reasons set forth above.

The Examiner rejected claims 5-7 as being unpatentable over Matsumara or Kitahara in view of either Borenstein, Kawakami or Nishikawa. For at least the reasons set forth above, these claims are not obvious in view of the cited references.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. According, the Examiner is respectfully requested to pass this application to issue.

If, for any reason, the Examiner finds the application other than in condition for allowance, Applicants request that the Examiner contact the undersigned attorney at the Los Angeles telephone number (213) 892-5630 to discuss any steps necessary to place the application in condition for allowance.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 199372003700.

Dated: February 2, 2004

Respectfully submitted,

By 

Mehran Arjomand

Registration No.: 48,231

MORRISON & FOERSTER LLP
555 West Fifth Street, Suite 3500
Los Angeles, California 90013
(213) 892-5630